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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/849,644	05/04/2001	Eric J. Horvitz	MS150906.1	1557
27195	7590	03/15/2005	EXAMINER	
AMIN & TUROCY, LLP 24TH FLOOR, NATIONAL CITY CENTER 1900 EAST NINTH STREET CLEVELAND, OH 44114			WONG, LESLIE	
			ART UNIT	PAPER NUMBER
			2167	

DATE MAILED: 03/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/849,644

**Applicant(s)**

HORVITZ ET AL.

**Examiner**

Leslie Wong

**Art Unit**

2167

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 August 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3-27 and 29-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-27 and 29-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02 August 2004 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 3-10, 13-22, 25-27, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Beyda et al.** (U.S. Patent 6,148,294) in view of **Basso et al.** ("Basso") (U.S. Patent 6,370,119 B1).

Regarding claims 1, 25, 27, 30-32, **Beyda** teaches a system and computer-readable medium for predicting a target file directory, comprising:

b). a second component that outputs a subset of the potential target directories (col. 1, line 66 – col. 2, line 8 and Fig. 9).

**Beyda** does not explicitly teach the steps of:

a). a first component that infers and/or determines expected navigation costs for directory operations associated with potential target directories, wherein the expected navigation cost is based on probabilistic and/or utility analysis;

b). wherein the subset is determined by selecting target directories, based in part on the expected navigation cost, in order to minimize a cost of traversing directories.

**Basso**, however, teaches the steps of:

a). a first component that infers and/or determines expected navigation costs for directory operations associated with potential target directories, wherein the expected navigation cost is based on probabilistic and/or utility analysis (col. 1, lines 22-28; col. 2, lines 44-56; col. 5, lines 62-66);

b). wherein the subset is determined by selecting target directories, based in part on the expected navigation cost, in order to minimize a cost of traversing directories (col. 7, lines 7-10; col. 6 lines 46-60).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of the cited references because **Basso's** teaching would have allowed **Beyda's** to determine the best path from a source node to a destination node by using an algorithm with low complexity, low processing power and the lowest additive cost as suggested by **Basso** at col. 2, lines 33-50.

Regarding claims 3 and 16, **Basso** further teaches a step wherein the utilities are functions of navigation costs associated with traversing from a node associated with a potential target directory under consideration to at least one of the other potential target directories (col. 2, lines 44-50; col. 10, lines 51-54).

Regarding claim 4, **Basso** further teaches a step wherein the second component further determines the subset of directories based on expected utilities which are computed as functions of probabilities of target information being at a node, and the navigation costs associated with traversing from the node to at least one of the potential target directories (col. 2, lines 44-50; col. 10, lines 51-54).

Regarding claims 5 and 17, **Basso** further teaches a step wherein the navigation costs are assigned by at least one of user selections and encoded (i.e., assign) within the system (col. 7 lines 11-36).

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Regarding claims 6, 18, and 29, **Beyda** further teaches wherein the potential target directories are determined from at least one of a local computer system and a remote computer system (col. 7, lines 27-32).

Regarding claims 7 and 19, **Beyda** further teaches wherein the probabilities are a function of recent and long-term file activity within a directory (col. 7, lines 53-62).

Regarding claims 8 and 20, **Beyda** further teaches wherein the long term file activity is determined from a predetermined time horizon (col. 5, lines 12-29).

Regarding claims 9 and 21, **Beyda** further teaches wherein the recent file activity is determined from frequency of access to a file (col. 6, line 60 – col. 7, line 4).

Regarding claims 10 and 22, **Beyda** further teaches a background monitor to determine tile access frequency (col. 7, lines 17-26).

Regarding claims 13, 26, and 33, **Beyda** further teaches a method for determining a potential target node for directory operations, comprising:

- a). assigning probabilities and utilities to a plurality of potential target nodes, (col. 5, lines 12-42; col. 2, lines 9-18);
- b). determining an expected utility from the probabilities and utilities associated with the plurality of target nodes (col. 5, line 12 – col. 6, line 22); and

c). displaying a candidate list of likely nodes to a user based upon the expected utility, the candidate list comprises a subset of the potential target nodes (col. 8, lines 14-16; col. 1, line 66 – col. 2, line 8).

**Beyda** does not explicitly teach the utilities represent costs associated with navigating from a recommended node to an actual target node.

**Basso**, however, teaches utilities represent costs associated with navigating from a recommended node to an actual target node (col. 1, lines 22-28; col. 2, lines 44-56; col. 5, lines 62-66; col. 7, lines 7-10; col. 6 lines 46-60).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to combine the teachings of the cited references because **Basso's** teaching would have allowed **Beyda's** to determine the best path from a source node to a destination node by using an algorithm with low complexity, low processing power and the lowest additive cost as suggested by **Basso** at col. 2, lines 33-50.

Regarding claims 14-15, **Basso** further teaches summing the products from each of the plurality of target nodes together to determine the expected utility for one of the plurality of potential target nodes (col. 5, lines 7-34; col. 6, lines 57-60; Fig. 8, element 563).

Regarding claim 34, **Basso** further teaches removing a potential target node with a maximum expected utility from consideration when evaluating expected utility for the other potential target nodes.

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4. Claims 11, 12, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Beyda et al.** ("**Beyda**") (U.S. Patent 6,148,294) in view of **Basso et al.** ("**Basso**") (U.S. Patent 6,370,119 B1) as applied to claims 1, 3-10, 13-22, 25-27, and 29 above, and further in view of **Candan et al.** (U.S. Patent 6,549,896).

Regarding claims 11 and 23, **Beyda** and **Basso** do not explicitly teach a list scan penalty for reducing probabilities associated with scanning lists within a directory.

**Candan et al.**, however, teaches computing the probability that the random walk process will transition to each of the other web page by the assigned penalty value (col. 9, lines 9-16).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to incorporate the feature of assigning a penalty associated with scanning a directory as this technique is widely use to calculate the navigation cost.

Regarding claims 12 and 24, **Beyda et al.** does not explicitly teach wherein the list scan penalty is determined as an exponential function that decreases as the number of elements on the list increases.

**Candan et al.**, however, teaches determining list scan penalty as an exponential function (col. 10, lines 12-17).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to allow determining list scan penalty as an exponential function as this technique is widely use to calculate the navigation cost.



***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Matthews (US 5521910 A)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leslie Wong whose telephone number is (571) 272-4120. The examiner can normally be reached on Monday to Friday 9:30am - 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Leslie Wong  
Patent Examiner  
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March 13, 2005